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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,415	04/07/2005	Yuji Nagano	P27700	4904

7055	7590	05/24/2007
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RESTON, VA 20191		

EXAMINER	
CHOI, STEPHEN	

ART UNIT	PAPER NUMBER
3724	

NOTIFICATION DATE	DELIVERY MODE
05/24/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

gbpatent@gbpatent.com
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Office Action Summary

Application No.

10/530,415

Applicant(s)

NAGANO ET AL.

Examiner

Stephen Choi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extension of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-13 is/are pending in the application.
- 4a) Of the above claim(s) 5 and 8-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-4, 6 and 7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 2/28/07
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 2-4 and 6-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Kullman (US 5,477,763).

Kullman discloses all the recited elements of the invention including left and right set teeth being a dovetail shaped and having a tooth tip which is gradually enlarged in a lateral direction (e.g., column 4, lines 3-5) and a straight tooth (e.g., 2). Regarding claims 3 and 7, interspersing the set teeth will result a height of the set teeth being smaller than a height of the straight tooth (e.g., note that height decreases tooth to tooth wherein the set teeth are positioned among the straight teeth). Regarding claims 4 and 6, an inclination and a bevel-dovetail shaped straight tooth having inclinations (e.g., Figure 3).

Response to Arguments

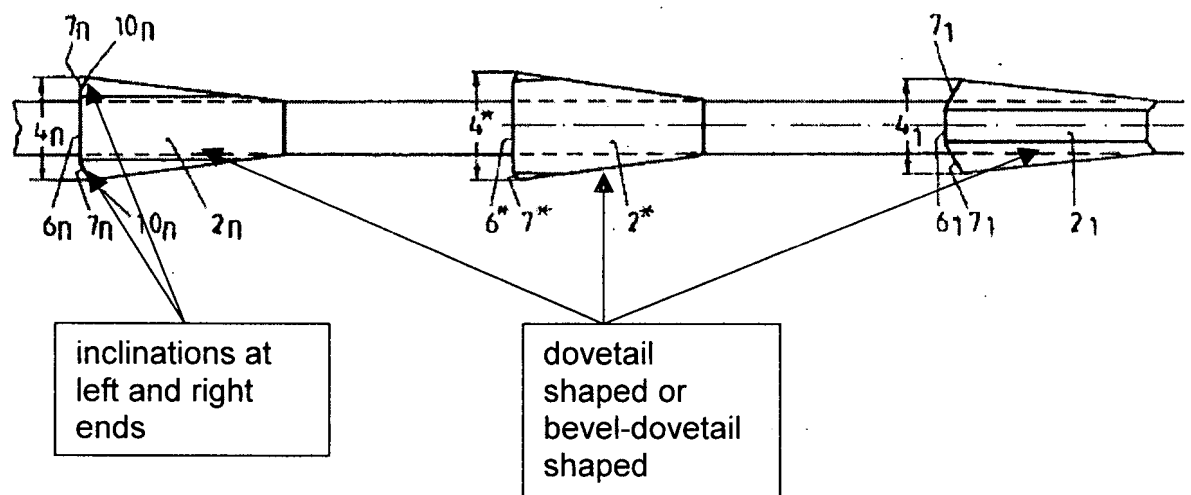
3. Applicant's arguments filed March 6, 2007 have been fully considered but they are not persuasive.

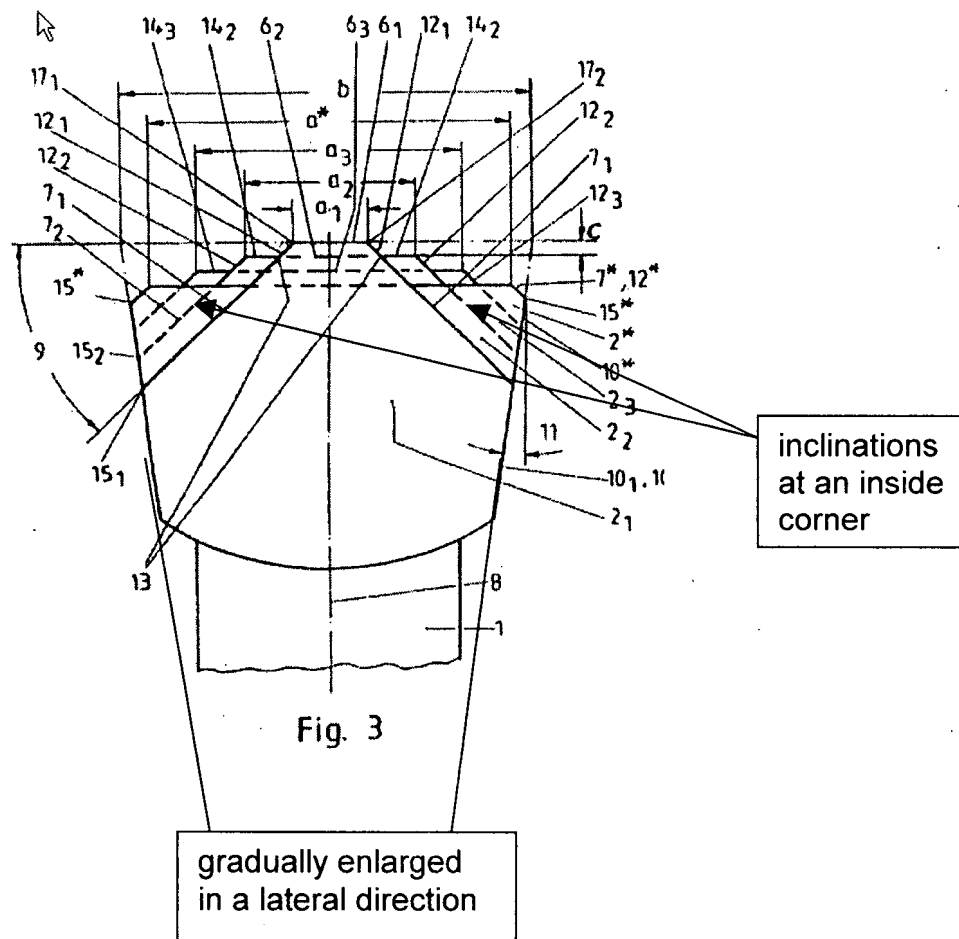
Applicants contend that Kullman lacks any disclosure of the left and right set teeth which are dovetail shaped with tips gradually enlarged in a lateral direction set forth in claims 2 and 6, a dovetail shaped straight tooth having a tooth tip which is

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gradually enlarged in the lateral direction set forth in claim 2, and bevel-dovetail shaped straight tooth having inclinations at both of left and right ends of a tooth tip which is gradually enlarged in the lateral direction set forth in claim 6.

The examiner respectfully disagrees. Kullman does teach teeth that are dovetail shaped with tips gradually enlarged in a lateral direction and a bevel-dovetail shaped straight tooth having inclinations at both of left and right ends of a tooth tip which is gradually enlarged in the lateral direction (e.g., Figures 2-3 below). Furthermore, Kullman, on col. 4, lines 3-5, clearly teaches that the teeth can be set at intervals.





Applicants further contend that Kullman lacks any disclosure of a height of each of the left and right set teeth being smaller than or substantially equal to that of the straight tooth or an inclination being formed at an inside corner on a tooth tip side of each of the left and right set teeth.

As stated above, with the set teeth being provided at intervals, the left and right set teeth are smaller than the straight tooth (e.g., 2₁) in view of height graduation shown on the Figure 3 above. Moreover, Figure 3 above shows the inclinations being formed at the inside corner of teeth which can be set at intervals.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Choi whose telephone number is 571-272-4504. The examiner can normally be reached on Monday-Thursday 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Boyer D. Ashley can be reached on 571-272-4502. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

sc
16 May 2007


STEPHEN CHOI
PRIMARY EXAMINER